Edulyte

ARITHMETIC PROGRESSIONS

A sequence of numbers in which the difference between any two consecutive numbers is identical throughout is known as arithmetic progression or AP. This difference between two consecutive numbers is known as the common difference. a very important concept in math with various uses in varied fields, it comes in handy when dealing with algebra, number theory, calculus, etc., in the real world.

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Q1: Which of the following sequences is an arithmetic progression?

A: 2, 4, 8, 16
B: 3, 6, 9, 12
C: 5, 10, 20, 40
D: 1, 3, 9, 27

Q2: What is the common difference in the arithmetic sequence: 2, 5, 8, 11, ...?

A: 2
B: 3
C: 5
D: 8

Q3: The sum of the first n terms of an arithmetic progression is given by which formula?

A: $S_n = n/2(a_1 + a_n)$
B: $S_n = n(a_1 + a_n)/2$
C: $S_n = n(a_1 + d)$
D: $S_n = (n/2)(2a_1 + (n-1)d)$

Q4: Which is not an arithmetic sequence?

A: 2, 4, 6, 8
B: 7, 14, 21, 28
C: 5, 10, 25, 26
D: 4, 8, 12, 16

Q5: What is the common difference in the sequence: 2, 9, 16, 23

A: 5
B: 3
C: 6
D: 7

Q6: The first term of an arithmetic progression is 3 and the common difference is 2, so the 10th term is?

A: 20
B: 18
C: 21
D: 19

Q7: Find the sum of the first 15 terms of the arithmetic sequence 4, 7, 10

A: 340
B: 240
C: 345
D: 356

Q8: The sum of the first 20 terms of an arithmetic sequence is 380 and the common difference is 4. Find the first term.

A: 5
B: 8
C: 6
D: 7

Q9: The 8th term is 25 and the 15th term is 41 in an arithmetic sequence. Find the common difference.

A: 2
B: 4
C: 5
D: 3

Q10: The sum of the first n terms in an AP is given as Sn= 2n^2+5n. What is the common difference?

A: 2
B: 9
C: 3
D: 4

Answers

Q1: C - 5, 10, 20, 40

Q2: B - 3

Q3: A - Sn = n/2(a1 + an)

Q4: C - 5, 10, 25, 26

Q5: D - 7

Q6: C - 21

Q7: A - 340

Q8: B - 8

Q9: D - 3

Q10: A - 2